

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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IN THE APPLICATION OF:

MATTHEW R. SIVIK

DOCKET NO.: 3246R

CUSTOMER NUMBER: 26645

SERIAL NO.: 10/805,055

EXAMINER: AMY T. LANGE

FILED: MARCH 19, 2004

GROUP ART UNIT: 3731

***TITLE: Functionalised Polymer Composition for Grease***

Wickliffe, Ohio

Dated: June 6, 2007

Mail Stop AF  
Hon. Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Declaration Under Rule 1.132

Sir,

I Matthew R. Sivik a named inventor of the above-identified application hereby declare:

1. I, Matthew R. Sivik, have been employed by The Lubrizol Corporation as a chemist since 1991. I obtained a PhD. from The Ohio State University in 1991 in the field of organic chemistry and have 16 years experience in research in the preparation and formulation of additives and polymers for use in lubricants and greases.
2. As noted in claim 1 which is reproduced herein:

A grease composition comprising:

- (a) about 0.06 to about 10 weight percent of a polymer comprising:
  - (i) a vinyl aromatic monomer;
  - (ii) an esterified unsaturated dicarboxylic acid anhydride or derivatives thereof;
- (b) a thickening agent, wherein the thickening agent is either

(i) an inorganic powder selected from the group consisting of clay, organo-clays, bentonite, fumed silica, calcite, carbon black, pigments, copper phthalocyanine and mixtures thereof; or

(ii) a metal salt of a carboxylic acid selected from the group consisting of a mono-hydroxycarboxylic acid, a di-hydroxycarboxylic acid, a poly-hydroxycarboxylic acid and mixtures thereof; and

(c) an oil of lubricating viscosity,

wherein the unsaturated dicarboxylic acid anhydride or derivatives thereof contains titratable acid groups with a total acid number of at least about 4.

Elements (a) and (b) of the claim are an esterified polymer and a thickening agent respectively. The esterified polymer and the thickening agent are different elements providing the grease with different properties. The thickener provides the grease with non-Newtonian properties. The esterified polymer provides the grease with water repellence and/or water wash-off properties.

3. I have reviewed US Patent Number 6,258,761 (hereinafter referred to as Lange) and understand the technical teachings disclosed therein. Lange does not disclose the combination of features (a), (b) and (a) as presently claimed in claim 1 of the present invention. In particular, Lange does not teach, suggest, or otherwise disclose element (b), the thickening agent. Further Lange discloses lubricating oil additives that are useful for engine oils. Engine oils are known to be fluids that exhibit Newtonian properties.
4. The detergents and dispersants disclosed by Lange in column 35, lines 50 to 55, and column 36, lines 60 to 66, are inherently oil-soluble. As an oil-soluble material, the dispersants and detergents have Newtonian properties and not to be considered grease thickeners. Accordingly, these materials do not exhibit non-Newtonian behaviour and since a grease displays non-Newtonian properties, these materials will not act as a thickener for a grease and is not equivalent to the thickener of claim 1 as presently claimed.
5. During the telephone interview with the Examiner, a question was raised relating to the disclosure in column 30, lines 28 to 31 of Lange. In particular Lange discloses:

“Under some circumstances, for example when 20 % by weight of reactant (A) is employed, the product of the reaction may become very thick or gel-like.”

In contrast the presently claimed invention specifies that the polymer is utilised at an amount in the range of about 0.06 to about 10 weight percent of the grease composition. Accordingly, the polymer of the present invention does not form a gel-like material as is disclosed by Lange.

6. I further declare that all statements herein made of my own knowledge are true and all statements herein made on information and belief are believed to be true. I understand that wilful false statements and the like are punishable by fine or imprisonment or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon.

A handwritten signature in dark ink, appearing to read 'Matthew R. Sivik', is written over a horizontal line.

Matthew R. Sivik